

Advance Neuroscience Technology

Laser Ablation Surgery

Cook Children's ushers in a whole new era in neurosurgery with the introduction of laser ablation surgery to North Texas. This minimally invasive neurosurgery uses smarter technology for more precise removal of lesions and tumors in a child's brain while at the same time reducing risk.

Laser ablation surgery is an iMRI-guided, minimally invasive procedure that allows abnormal tissue to be thermally destroyed in real time. In fact, doctors can target problem brain tissue within a single millimeter (about the size of a grain of sand), greatly reducing risk to the surrounding tissue. Surgery takes place in an iMRI suite so that doctors can see the tumor or lesion and remove all of it in a single surgery. Most patients go home within 24 hours and with only one stitch.



In May 2013, Cook Children's became the first pediatric hospital in North Texas to use an iMRI-guided minimally invasive laser ablation system in real time for brain surgery. Only ten pediatric facilities in the United States offer this procedure.

What is laser ablation used for?

Because it is extremely precise and minimally invasive, laser ablation surgery reduces risk and recovery time for patients with epilepsy and certain types of brain tumors.

Epilepsy applications include:

- Deep brain lesions
- Focal cortical dysplasia
- Mesial temporal lobe epilepsy
- Seizures that start in a focal area of the brain

Laser ablation surgery may also be effective for children who have had open surgery in the past, and those cases where seizures are difficult to treat.

Brain tumors treated include:

- Astrocytoma
- Ependymoma
- Glioblastoma
- Meningioma
- Metastatic brain tumors
- Schwannoma

Laser ablation also provides an option for patients with inoperable tumors due to prior surgeries and/or radiation, or because of their location in the brain would cause considerably more risk with a more traditional brain surgery such as a craniotomy.

Benefits of laser ablation

- Experienced pediatric neurosurgeons
- An iMRI suite, which reduces patient's surgery and anesthesia time, and may also improve recovery time
- Uses very precise light energy to destroy tumors and lesions while reducing risk to surrounding tissue
- Targeted abnormal tissue removal
- Surgery can be performed with the patient wide awake or asleep
- Often performed on otherwise inoperable tumors or lesions

Does not use radiation

Minimally invasive surgery

Little or no pain during recovery

Need help referring a patient?

Please call the International Patient Services department at +1-682-885-4685, send faxes to +1-682-885-2557, or email international@cookchildrens.org